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Weed Management Guide 1982

FOR COMMERCIAL VEGETABLE GROWERS

Restricted-use herbicides are identified with an asterisk(*).
You must be certified as a pesticide applicator to use restricted-use pesticides.
See your county Extension adviser in agriculture for information.

WEED GROWTH reduces the income of vegetable growers in the United States by millions of dollars annually as a result of lower yields, poorer quality, and added labor in harvesting and processing.

This guide should be used together with the grower's knowledge of soil types and the crop and weed history of the area to be treated. Whether to use herbicides or other means of weed control depends in part on the severity of past weed infestations. In some instances, mechanical control may be sufficient. If so, shave off weeds with a sharp hoe or cultivator while gently breaking up the crust. Deep tillage causes severe injury to many shallow-rooted plants and helps place a fresh supply of weed seeds in position to germinate. Keeping equipment sharp and in good condition will help reduce injury to desirable plants. Hoe carefully around your plants, and hand pull weeds close to the plants.

For warm season crops such as fresh market tomatoes, peppers, eggplant, cucumbers, and melon, black polyethylene mulch will control annual weeds, conserve moisture, and increase the soil temperature in early spring. The higher temperature increases early season growth. Natural mulch materials may require considerable hand labor for application. Most organic materials are bulky and must be hauled to the place of use. This is a problem for large commercial plantings. Organic mulches tend to reduce soil temperature.

Herbicide application may be needed in addition to mechanical control. Several herbicides may be suggested for some crops. These herbicides have shown good control with no injury to the vegetables under test conditions. Not all herbicides cleared for use on a species are necessarily listed. Where the choice of more than one herbicide is suggested, the decision rests with the grower and is based on his knowledge of past weed infestations, crop rotations, and material costs. Where one herbicide will not control the weeds present, a combination of herbicides may be suggested. When using a herbicide for the first time, it is advisable to use a small-scale trial.

These suggestions for weed control in vegetables are based on research at the Illinois Agricultural Experiment Station, the U.S. Department of Agriculture, and other research institutions. The University of Illinois and its agents assume no responsibility for results from the use of herbicides, whether or not they were used in accordance with suggestions, recommendations, or directions of the manufacturer or any governmental agency.

Reading the label of the herbicide container is the most profitable time you spend in weed control. Use of the material and methods of application and use depend on registration of the herbicide by federal and state Environmental Protection Agencies (EPA). Do not use any herbicide *unless the label states that it is cleared for the use on the crop to be treated.*

Herbicides are being classified for *general use* or *restricted use* by the U.S. Environmental Protection Agency. A person wishing to use a herbicide classified for restricted use must be certified as a private or commercial pesticide applicator by the Illinois Department of Agriculture. Contact your county Extension adviser in agriculture for details about this program.

Only a few herbicides have been classified at this time. More may be classified later.

When applying mixtures of chemicals, the *user* assumes responsibility for freedom from residues if the mixture is not labeled by the EPA.

Suggestions sometimes change during the growing season, based on EPA clearances that were made after this circular was issued. This publication, printed once a year, is subject to change without notification.

Watch for notice of changes in the EPA registration of herbicides (as released by the EPA) in the *Illinois Vegetable Farmer's Letter* and the *Insect, Weed, and Plant Disease Survey Bulletin.* Subscription forms for the latter are available from the Agricultural Newsletter Service, 116 Mumford Hall, 1301 West Gregory Drive, Urbana, Illinois 61801, or your county Extension Office. You can obtain the *Vegetable Farmer's Letter* from Vegetable Crops Extension, University of Illinois, 1103 West Dorner Drive, Urbana, Illinois 61801.

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN COLLEGE OF AGRICULTURE COOPERATIVE EXTENSION SERVICE
Prepared by H. J. Hopen, Department of Horticulture (revised annually)
CIRCULAR 907 (October 1981)

For Application During the Growing Season (1982 Only)

Crop	*Treatment*	*Active ingredient per acre actually covered*[1]	*Weeds controlled*	*Timing of application (based on crop stage)*	*Remarks, cautions, limitations*
Asparagus (seedlings)	Amiben	3 lb.	Annuals	Immediately after seeding	Irrigation or rainfall after treatment will give maximum control.
Asparagus (established plantings)	dalapon	5-10 lb.	Perennial grass	End of harvest season following disking	Apply when grass weeds are 3 to 4 inches tall. Direct spray under fern growth. Use surfactant as directed on label.
	diuron	1-4 lb.	Annuals	In spring, after harvest, or both	Apply after disking. Do not exceed 6 pounds per growing season. Use a lighter rate on sandy soil. With diuron and Princep, a spring application may be sufficient after the first year.
	Princep	3-4 lb.	Annuals	In spring, after harvest, or both	Apply after disking. Do not treat during the last year in asparagus because of residue.
	Sinbar	1.2-2.4 lb.	Annuals	In spring, after harvest, or both	Use lower rates on coarse soils. Do not apply more than 2.4 lb. per acre per year. Do not use on soils with less than 1 percent organic matter. Do not plant to any other crop for two years after application.
	metribuzin	1-2 lb.	Primarily broadleaf weeds	Early spring before the spears emerge or after harvest	Apply after disking. Do not apply within 14 days of harvest. Can help control broadleaf weeds when used with dalapon, diuron, or Princep. Do not apply more than 2 lb. per acre per growing season.
	Perennial weed control, applications during and outside the growing season (See separate listing at the end of this table.)				
	Stale seedbed before crop emergence (See separate listing at the end of this table.)				
	Preemergence				
Beans, dry, lima, and snap	Treflan	0.5-0.75 lb.	Annuals[2] (primarily grasses)	Preplant soil application, incorporate with soil immediately	Plant crop immediately, or within 3 weeks after application. Can be used up to 1 pound per acre on dry beans.
	Tolban	0.5-1 lb.	Primarily annual grasses	Preplant soil incorporation Premerge-3	
	Premerge-3	6-7.5 lb.	Annuals	Can be used between planting and crop emergence	Do not use on light, sandy soil. Some stand reduction may result from use. See label for precautions.
	Postemergence				
	Basagran	0.75-1 lb.	Annual broadleaf weeds, Canada thistle, nutsedge	When weeds are small and are actively growing; after the first trifoliate leaf appears on beans	Can provide good, broad-spectrum control when combined with a grass-active herbicide. Do not mix with other pesticides. See Basagran entry under corn, postemergence for Canada thistle and nutgrass control.
	Perennial grass control, applications outside the growing season (See separate listing at the end of this table.)				
Beans, lima and dry	Amiben	2-3 lb.	Broad spectrum of annual weeds	Immediately after seeding, or preplant-incorporated for lima beans	Field may be rotary-hoed without destroying herbicide action.
Beans, snap	Eptam	3 lb.	Annual grasses and nutgrass[3]	Preplant soil application, incorporate with soil immediately	
	Dacthal	6-10 lb.	Annuals[4] (primarily grasses)	Immediately after seeding	Do not feed treated plant parts to livestock.
Beans, dry	Cobex	0.3-0.6 lb.	Annuals	Preplant soil incorporation	
Beets, garden	Pyramin	4 lb.	Annuals (primarily broadleaved)	Preemergence or after beets emerge and before weeds have two true leaves	Rainfall or irrigation needed to activate. Where grasses are a severe problem, use 4 pounds of Pyramin plus 4 pounds of Ro-Neet.
	Ro-Neet	4 lb.	Annual grasses	Preplant soil application, incorporate with soil immediately	Use a combination treatment with Pyramin to broaden control spectrum.
	Direct-seeded or transplanted				
Broccoli Brussels sprouts Cabbage Cauliflower	Treflan	0.5-0.75 lb.	Annuals[2] (primarily grasses)	Preplant soil application, incorporate with soil immediately	Stunting or growth reduction may occur at recommended rates under growth stress conditions. Can be used up to 1 pound per acre on transplants.
	Dacthal	6-10 lb.	Annuals[4] (primarily grasses)	Immediately after seeding. Can also be incorporated preplant	
	Preemergence				
Carrots	Treflan	0.5-1 lb.	Annuals[2] (primarily grasses)	Preplant soil application, incorporate with soil immediately	Seed after application to 3 weeks later.
	Postemergence				
	Lorox	0.75-1.5 lb.	Annuals	Postemergence on carrots only after the crop is 3 inches tall; grasses, less than 2 inches; broadleaves, less than 6 inches	Do not feed treated foliage to livestock or replant treated area for 4 months. More than one application may be made, but do not exceed a total of 2 pounds per acre. Do not use over 40 PSI. Use no surfactants when temperatures exceed 80°F., or crop injury may result.

Carrots continued on the next page.

(See notes at the end of the table.)

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For Application During the Growing Season (continued)

Crop	Treatment	Active ingredient per acre actually covered[3]	Weeds controlled	Timing of application (based on crop stage)	Remarks, cautions, limitations
Carrots (continued)	Stoddard Solvent	60-80 gal.	Annuals	After two true leaves have appeared (do not apply to carrots or parsnips after they are ¼ inch in diameter, since an oily taste may result)	Most effective when sprayed on cloudy days or during high humidity, and when weeds are not more than 2 inches high. May not control ragweed. Do not apply within 40 days of harvest. Can be used on celery, dill, parsnips, and parsley.
	Preemergence				
Corn, pop	atrazine	2-3 lb.	(See sweet corn)	(See sweet corn)	See sweet corn, *except the section on preemergence combinations.*
	Bladex	(See remarks)	Annuals	Preemergence only	Some pop corn varieties are sensitive to the application rate. (See remarks on Bladex under sweet corn.)
	Eradicane	4-6 lb.	Difficult-to-control weeds	Preplant soil application, incorporate with soil	See sweet corn.
	Lasso	2-2.5 lb.	Annuals	Preemergence	See sweet corn.
	Princep	2-3 lb.	Annuals	Preemergence	Plant only crops so specified on the label the following year. Do not graze treated areas.
	Sutan+	3-4 lb.	Primarily annual grasses	Preplant soil application, incorporate with soil	See sweet corn.
	Postemergence				
	2,4-D	0.5 lb.	Broadleaved weeds	Postemergence	Apply when corn is 3 to 10 inches tall.
	Perennial grass control, applications outside the growing season (See separate listing at the end of this table.)				
	Preemergence				
Corn, sweet	atrazine	2-3 lb.	Annuals, annual and perennial grasses[5]	Preemergence, apply no later than 3 weeks after seeding. Shallow cultivation may improve weed control during dry weather.	Grow corn a second year without atrazine treatment. This chemical has a high soil residue. Do not plant other vegetable crops on a sprayed area until a second year of corn has been grown. Use atrazine where quackgrass is a problem. Residue hazard decreased when banded or in combination with Lasso, propachlor, or Sutan.
	Bladex	(See remarks)	Annuals	Preemergence only	Some sweet corn varieties are sensitive to the application rate. Has been shown to have less soil residue than atrazine. See label for rates and precautions. Do not use postemergence, or on sandy or loamy-sandy soils (under 1 percent organic matter). Can be combined with other herbicides to reduce the rate being used. NOTE: The Shell Chemical Co. has a bulletin on using Bladex on pop and sweet corn.
	Eradicane	4-6 lb.	Difficult-to-control weeds	Preplant soil application, incorporate with soil	Use to control weeds that are difficult to control with other herbicides, such as wild cane, nutsedge, quackgrass, wild Proso millet, and seedling Johnsongrass.
	Lasso	2-2.5 lb.	Annuals	Preemergence	Preplant incorporation may aid control of nutgrass.
	propachlor	4-5 lb.	Annuals	Preemergence	Do *not* use on sandy soils. Is an excellent herbicide on soils with a high organic-matter content.
	Sutan+	3-4 lb.	Primarily annual grasses	Preplant soil application, incorporate with soil	Especially useful on sandy soil and where nutgrass is a problem.
	Combinations				
	atrazine plus Lasso	1.5 lb. +2 lb.	Annuals and perennial grasses	Preemergence or preplant incorporated	See label for slightly higher rate of Lasso for preplant incorporation.
	atrazine plus propachlor	1.5 lb. +3 lb.	Annuals and perennial grasses	Preemergence	Use to reduce atrazine residue.
	atrazine plus Sutan+	1 lb. +3-4 lb.	Annuals and perennial grasses	Preplant soil incorporation, incorporate with soil immediately	Use where nutgrass is a problem and to reduce atrazine residue.
	Postemergence				
	2,4-D (amine)	0.5 lb.	Broadleaved weeds	Postemergence	Preferably, apply before corn is 6 inches tall. If corn is over 12 inches, reduce the rate to ¼ pound.
	atrazine	2 lb.	Annuals, annual and perennial grasses[5]	Directed spray 3 weeks after emergence	Can be combined with crop oils for postemergence application as an emergency measure. This may increase residue the following year. Preemergence use preferred. Do not graze or feed treated foliage for 21 days after treatment.
	Basagran	0.75-1 lb.	Broadleaved annual weeds, Canada thistle, and nutsedge	Early postemergence when the weeds are small and actively growing. Delay will result in less control.	For Canada thistle and nutsedge, split applications are preferred. Make the first one when the plants are 6 to 8 inches tall; for nutsedge, 7 to 10 days later; for Canada thistle, 10 to 14 days later (or use one application plus cultivation). Do not mix with other pesticides.
	Perennial grass control, applications outside the growing season (See separate listing at the end of this table.)				
	Stale seedbed before crop emergence (See separate listing at the end of this table.)				

(See notes at the end of the table.)

For Application During the Growing Season (continued)

Crop	*Treatment*	*Active ingredient per acre actually covered*[1]	*Weeds controlled*	*Timing of application (based on crop stage)*	*Remarks, cautions, limitations*
Cucumbers Muskmelons Watermelons	Alanap[6]	3-5 lb.	Annuals[8]	Immediately after seeding or transplanting	Do not use on cold soil. Rainfall or irrigation after treatment gives maximum control.
		3-3.5 lb.		After transplanting or vining	Use the granular form. Keep away from foliage. Apply to soil after the weeds have been removed.
	Prefar	4-6 lb.	Annuals (primarily grasses)	Preplant soil application, incorporate with soil immediately	Is primarily a grasskiller. Consult label for sensitive crops within 18 months after application. Prefar can be used in rotation with tomatoes, broccoli, cauliflower, lettuce, carrots, onions, and summer squash within 18 months. Soybeans can be planted 12 months after Prefar application.
	Prefar plus Alanap[6]	4 lb. +2-3 lb.	Grasses and broadleaved weeds	Preplant soil incorporation for Prefar; Alanap, as an immediate postseeding application	Has value for broad-spectrum weed control. Consult label for sensitive crops within 18 months after Prefar application. Has EPA approval as a tank mixture.
	Where earliness is desired, black polyethylene mulch can be used as an alternative to herbicides. It will control annual weeds, conserve moisture, and increase the soil temperature in early spring.				
	For melons — stale seedbed before crop emergence (See separate listing at the end of this table.)				
Eggplant	Dacthal	6-10 lb.	Annuals[4] (primarily grasses)	After plants are established, 4-6 weeks after transplanting	Cultivate and weed prior to application. Can be applied to plants as part of a uniform soil application.
	Devrinol	1-2 lb.	Annuals	Preplant soil incorporation	For use in transplanted eggplant.
	Where earliness is desired, black polyethylene mulch can be used as an alternative to herbicides. It will control annual weeds, conserve moisture, and increase the soil temperature in early spring.				
Greens	Dacthal	6-10 lb.	Annuals[4] (primarily grasses)	Immediately after seeding	For use on collards, kale, mustard greens, and turnips.
	Treflan	0.5-0.75 lb.	Annuals[2] (primarily grasses)	Preplant soil application, incorporate with soil immediately	For use on collards, kale, mustard greens, and turnip greens.
	Furloe	1-2 lb.	Primarily broadleaved annuals	Preemergence	For spinach only. Use lower rates in cool, wet weather.
Horseradish	Dacthal	6-10 lb.	Annuals[4] (primarily grasses)	Immediately after transplanting	Use for annual grass control and combine with TOK as an early postemergence treatment for broadleaved weeds.
Lettuce	Balan	1.5 lb.	Annuals	Preplant soil incorporation Incorporate with soil immediately	Is primarily a grasskiller. Seed after application to 3 weeks later. Do not plant wheat, barley, rye, grass, onions, oats, beets, or spinach for 12 months after application.
	Kerb*	1-2 lb.	Annuals	Preemergence or preplant-incorporated	Do not use when the air temperature exceeds 85° F. Use the lower rates listed on sandy soil. Do not use on peat or muck soils. See label for rotation crops. For best results, rainfall or irrigation is needed 1 to 2 days after application, especially during warm weather.
	Stale seedbed before crop emergence (See separate listing at the end of this table.)				
	Preemergence				
Onions	Dacthal	6-10 lb.	Annuals[4] (primarily grasses)	Immediately after seeding or transplanting	May not kill smartweed or common ragweed. Can be used on seeds, sets, or seedlings. Use only on mineral soils. Use lower rates on sandy soils. A double application of Dacthal can be used at seeding, layby, or both.
	Randox	4-6 lb.	Annuals[7] (primarily grasses)	Just before onions emerge	Use on muck soils. Heavy rainfall may reduce stand. Very effective on purslane and pigweed.
	Postemergence				
	Furloe	3-6 lb.	Broadleaved weeds (especially smartweed)	On seeded onions: loop stage or after 3- to 4-leaf stage	In the later sprays, direct at base of onion plant. If more than one application is applied do not exceed 6 pounds per acre for the season. *Use lower rates in cool, wet weather.* Use no later than 30 days before harvest. Do not use on sandy soils.
	Preemergence				
Peas	propachlor	4-4.9 lb.	Annuals	Preemergence	Do *not* use on sandy soil.
	Treflan	0.5-0.75 lb.	Annuals[2]	Preplant soil incorporation, incorporate with soil immediately	Seed after application to 3 weeks later. Some reduction of growth and stand reduction possible under stress. May suppress some root rot.
	Tolban	0.5-0.75 lb.	Annuals	Preplant soil application, incorporate with soil immediately	See remarks on Treflan. Has a state of Illinois label.
	Cobex	0.3-0.5 lb.	Annuals	Preplant soil incorporation	

Peas continued on the next page.

(See notes at the end of the table.)

For Application During the Growing Season (continued)

Crop	*Treatment*	*Active ingredient per acre actually covered*[1]	*Weeds controlled*	*Timing of application (based on crop stage)*	*Remarks, cautions, limitations*
	Preemergence or Postemergence				
Peas (continued)	Premerge-3	0.3-9 lb.	Annuals (primarily broadleaved weeds)	Preemergence or postemergence	Preemergence use 6 to 9 pounds; postemergence, use 0.3 pound to 1.1 pounds. Apply prior to bloom when peas are 2 to 8 inches tall. See label for further precautions. Preemergence use may help suppress root rot.
	Postemergence				
	Basagran	0.75-1 lb.	Annual broadleaved weeds, Canada thistle, nutsedge	When weeds are small and are actively growing; after peas have 3 pairs of leaves (or 4 nodes)	Can help control Canada thistle. Can provide good, broad-spectrum control when used with a grass-active herbicide. Do not mix with other pesticides. See Basagran entry under corn, postemergence for Canada thistle and nutgrass control.
	MCPB	1 lb.	Broadleaved weeds and Canada thistle	When peas are 3-7 inches tall and no later than 4 nodes prior to pea blossom	May delay maturity 1 to 4 days. Use at least 20 gallons of water per acre. Do not feed vines to livestock.
	MCPA	0.25-0.5 lb.			MCPA is more effective on mustard. MCPB is less injurious to peas.
	Perennial grass control, applications outside the growing season (See separate listing at the end of this table.)				
Potatoes, Irish	Eptam	3-6 lb.	Annual grasses and nutgrass[3]	Drag-off treatment at emergence or preplant soil application Incorporate with soil immediately	Use lower rate on sandy soil.
	Treflan	0.5-1 lb.	Annuals[2] (primarily grasses)	Drag-off treatment at emergence	Use a light incorporation.
	Lorox	0.75-2 lb.	Annuals	Apply prior to potato emergence	Plant tubers at least 2 inches deep. Do not replant treated area to other crops for 4 months after treatment. May injure crop on light, sandy soil. Do not apply over exposed tubers.
	dalapon	7 lb.	Quackgrass	Before plowing in spring; wait 4 days before plowing and planting	Not for fields intended for red-skinned varieties or White Rose. Do not plant potatoes for 4 weeks. Use surfactant as directed on label.
	metribuzin	0.25-0.5 lb.	Annuals (primarily broadleaved)	Postemergence, following a preemergence grass herbicide	Can be used preemergence also. Do not exceed 1 pound per acre in a season. Do not apply within 60 days of harvest. Do not use on red-skinned or early maturing white varieties. Do not apply in cool, wet weather.
	Lasso	2.5-3 lb.	Annuals	Apply at drag-off	Do not use on sandy soils. Can be used alone or in combination with Lorox or dinoseb.
	Stale seedbed before crop emergence (See separate listing at the end of this table.)				
Potatoes, sweet	Dacthal	6-10 lb.	Annuals[4] (primarily grasses)	Immediately after planting	
	Amiben	3 lb.	Annuals	Immediately after planting	
	Dymid, Enide	4-6 lb.	Annuals	Immediately after transplanting	Do not plant nonapproved crops on treated soil during the same season.
Squash Pumpkins	Amiben	3-4 lb.	Annuals	As soon after seeding as possible, or preplant-incorporated	Use on loam soils. Amiben can be applied broadcast or banded over the row in pumpkins.
	Prefar	4-6 lb.	Annuals (primarily grasses)	Preplant soil application, incorporate with soil immediately	Use on sandy soils. Is primarily a grasskiller. Consult label for sensitive crops within 18 months after application. Prefar can be used in rotation only with tomatoes, broccoli, cauliflower, lettuce, carrots, onions, and summer squash within 18 months of application. Soybeans can be planted 12 months after application of Prefar.
Tomatoes, direct-seeded and transplanted	Dymid, Enide	4-6 lb.	Annuals	Preemergence	Do not plant other food crops on treated areas for 6 months. If used under dry soil conditions, a shallow (1 inch) incorporation as a preplant treatment may improve weed control. Can also be used on transplanted peppers.
	Devrinol	1-2 lb.	Annuals	Preplant soil incorporated	Also used on direct-seeded and transplanted peppers.
	metribuzin	0.25-1 lb. (min.-max.)	Primarily broadleaf. Should be used with a grass-active herbicide.	Preplant incorporated. Postemergence, can be broadcast or directed.	Apply with ground equipment to seeded and transplanted tomatoes. Do not use air-blast or other high-pressure spray equipment. Do not use on peppers.
		0.25-0.5 lb.		Preplant incorporated, transplant tomatoes	Alone or in a tank-mix combination with Treflan.
		0.25-0.5 lb.		Broadcast spray, established tomatoes	Single or multiple applications. Minimum of 14 days between treatments. Direct-seeded plants should have 5 or 6 leaves; transplants should show new growth.

Tomatoes continued on the next page.

(See notes at the end of the table.)

For Application During the Growing Season (continued)

Crop	*Treatment*	*Active ingredient per acre actually covered*[1]	*Weeds controlled*	*Timing of application (based on crop stage)*	*Remarks, cautions, limitations*
Tomatoes (continued)	metribuzin (continued)	0.5-1 lb. (For min.-max. rates)		Directed spray, established tomatoes	Recommended for use in fields with severe weed problems, or for fields with hard-to-control weeds. Do not apply within 7 days of harvest. Do not apply within 3 days following periods of cool, wet, or cloudy weather; otherwise, crop injury may occur. Do not apply to established tomatoes within 24 hours after the application of other pesticides. Do not tank-mix with other pesticides, except Treflan. Do not apply more than 1 pound per acre per crop season, or more than 1 pound per acre within a 35-day period. Allow at least 14 days between applications, regardless of the dosage or method used. Do not use hot caps on tomatoes within 7 days before application, or at any time afterward.
	Stale seedbed before crop emergence (See separate listing at the end of this table.)				
Tomatoes and Peppers, transplanted	Amiben	3-4 lb.	Annuals	Wait 3 days after transplanting to apply	Use granular formulation only. Apply to dry foliage in order to avoid leaf burn. Do not use on sandy soils.
	Treflan	0.5-1 lb.	Annuals[3] (primarily grasses)	Preplant soil application, incorporate with soil immediately	Some reduction of growth may be possible under growth stress conditions, or if rates are higher than suggested for the soil type.
	Where earliness is desired, black polyethylene mulch can be used as an alternative to herbicides. It will control annual weeds, conserve moisture, and increase the soil temperature in early spring.				

For Application Outside the Growing Season

	Stale seedbed, before crop emergence				
Asparagus	Paraquat*	0.5-1 lb.	All emerged green foliage	Before crop emergence; allow maximum weed emergence prior to treatment	Weeds that emerge after treatment will not be controlled. Crop plants that have emerged at application will be injured. Do not apply within 18 months of harvest. Use with a preemergence or preplant sustained-action weed control system.
Corn, sweet Lettuce Melons Peppers Potatoes Tomatoes	Paraquat*	0.5-1 lb.	All emerged green foliage	Before crop emergence	Weeds that emerge after treatment will not be controlled. Crop plants that have emerged at application will be injured. Use with a preemergence or preplant, sustained-action weed control system.
	Perennial weed control, applications during and outside the growing season				
Asparagus	Roundup	2-5 lb.	(See remarks)	Before emergence, or with shielded or directed sprays during fern growth	Use to control milkweed, thistle, field bindweed, quackgrass, or Johnsongrass. Apply to quackgrass when it is 6-8 in. tall in the fall or spring. Apply to Johnsongrass when it is at least 12 in. tall and actively growing. Do not till for the specified time for each species (see label). Does not provide residual weed control. Do not mix, store, or apply Roundup spray solutions in containers or spray tanks made of galvanized or unlined steel (except stainless steel).
	Perennial grass control, applications outside the growing season				
Beans, edible Corn, sweet Corn, pop Peas	Roundup	2-3 lb.	(See remarks)	(See remarks)	Use for quackgrass or Johnsongrass control. Apply to quackgrass when 6 to 8 inches tall in fall or spring. Apply to Johnsongrass when at least 12 inches tall and actively growing. Do not till until 3 to 7 days after application. Does not provide residual weed control. Do not mix, store, or apply Roundup spray solutions in galvanized steel or unlined steel containers (except stainless steel) or spray tanks.

*** Restricted-use herbicides are identified with an asterisk(*).**

[1] Based on active ingredients (actual amount of active herbicide in material or acid equivalent). Use lower rate on sandy soil and higher rate on clay and loam soils. When using a band application over the row, adjust amount of material applied to the part of an acre treated. [2] May not control ragweed and panicum. [3] May not control smartweed. [4] May not control ragweed, smartweed, and velvetleaf. [5] May not control crabgrass. [6] Do *not* use Alanap Plus, Solo, Whistle, or Amoco Soybean herbicide. These materials all contain Alanap plus another ingredient that may cause injury. [7] May not control smartweed and velvetleaf.

NOTE: In the suggestions in this publication, trade names of herbicides are usually used. The list below shows trade names and their corresponding common names. **Restricted-use herbicides are identified with an asterisk(*).**

Common name	Trade name	Common name	Trade name	Common name	Trade name
alachlor	Lasso	DCPA	Dacthal	naptalam	Alanap
atrazine	AAtrex and Atrazine	dinitramine	Cobex	paraquat*	Paraquat*
benefin	Balan	dinoseb	Premerge-3, Sinox	profluralin	Tolban
bensulide	Prefar	diphenamid	Dymid, Enide	pronamide*	Kerb*
bentazon	Basagran	diuron	Karmex and others	propachlor	Bexton, Ramrod, and Propachlor
butylate+safener	Sutan+	EPTC	Eptam	pyrazon	Pyramin
CDAA	Randox	EPTC+safener	Eradicane	simazine	Princep
chloramben	Amiben	glyphosate	Roundup	terbacil	Sinbar
chlorpropham	Furloe	linuron	Lorox	trifluralin	Treflan
cyanazine	Bladex	MCPA, MCPB	(numerous)	Petroleum solvent	Stoddard Solvent
cycloate	Ro-Neet	metribuzin	Lexone, Sencor	2,4-D (amine)	(numerous)
dalapon	Basfapon, Dowpon	napropamide	Devrinol		

Storing Pesticides and Containers

Keep pesticides and containers in a separate building, room, or enclosure used only for this purpose. Such buildings or rooms should be dry, ventilated, and locked. Fence outside storage areas to protect children and animals and to discourage pilferage. CAUTION: Do not store weedkillers, herbicides, or defoliants in the same room with insecticides. Chlorate salts can create a fire or explosion hazard. Remove only the pesticides needed for one day's operation and return empty containers — and any unused pesticide — to the storage area each day.

Disposing of Pesticides and Containers

Surplus Pesticides. To dispose of surplus pesticide mixtures, try to find other areas with the same pest problem and use up any extra tank mix or rinse water on these areas. Do not drain surplus pesticides in any location where they can contaminate wells, streams, rivers, lakes, or ponds.

Operators of landfills meeting environmental safety standards can obtain supplemental permits to handle toxic waste materials, including pesticides. To dispose of large quantities of surplus pesticides, contact the Illinois EPA Division of Land Pollution Control to locate the nearest landfill with a supplemental permit for toxic waste or to obtain specific instructions about disposal.

Pesticide containers. All empty pesticide containers, regardless of their type, should be rinsed three times before disposal. Rinse water should be dumped in the tank. Triple-rinsed cointainers should be punctured or broken to facilitate drainage and to prevent reuse for any purpose. They should then be hauled to a sanitary landfill for disposal. Small quantities of containers may be buried singly in open fields, with due regard for the protection of surface and subsurface water.

Illinois regulations permit the burning of combustible containers provided that they are burned on the premises where they were used, that they are burned more than 1,000 feet from residential areas, that the burning will not cause undue visibility or environmental hazards, and that no reasonable alternate disposal method is available.

Do not breathe smoke from burning pesticide containers, and do not burn containers that have weedkillers such as 2,4-D or similar herbicides. When these change to a gas, the vapors may damage nearby crops and shrubbery. Pesticides containing chlorates may explode when heated and, therefore, should not be burned.

Other Publications on Weed Control

Copies of the following publications on weed control are available from the office of your county Extension adviser in agriculture and the Office of Agricultural Publications, 123 Mumford Hall, 1301 West Gregory Drive, Urbana, Illinois 61801.

Calibrating and Adjusting Granular Row Applicators — Circular 1008
Controlling Weeds in the Home Garden — Circular 1051
Equipment and Calibration: Low Pressure Sprayers — Circular 1192
Turfgrass Pest Control — Circular 1076
Herbicides for Commercial Fruit Crops in Illinois — H-659
Herbicide Recommendations for Commercial Nurserymen — NC-2-80
1982 Row Crop Weed Control Guide
Weed Control in Small Grains, Forages, and Pastures

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